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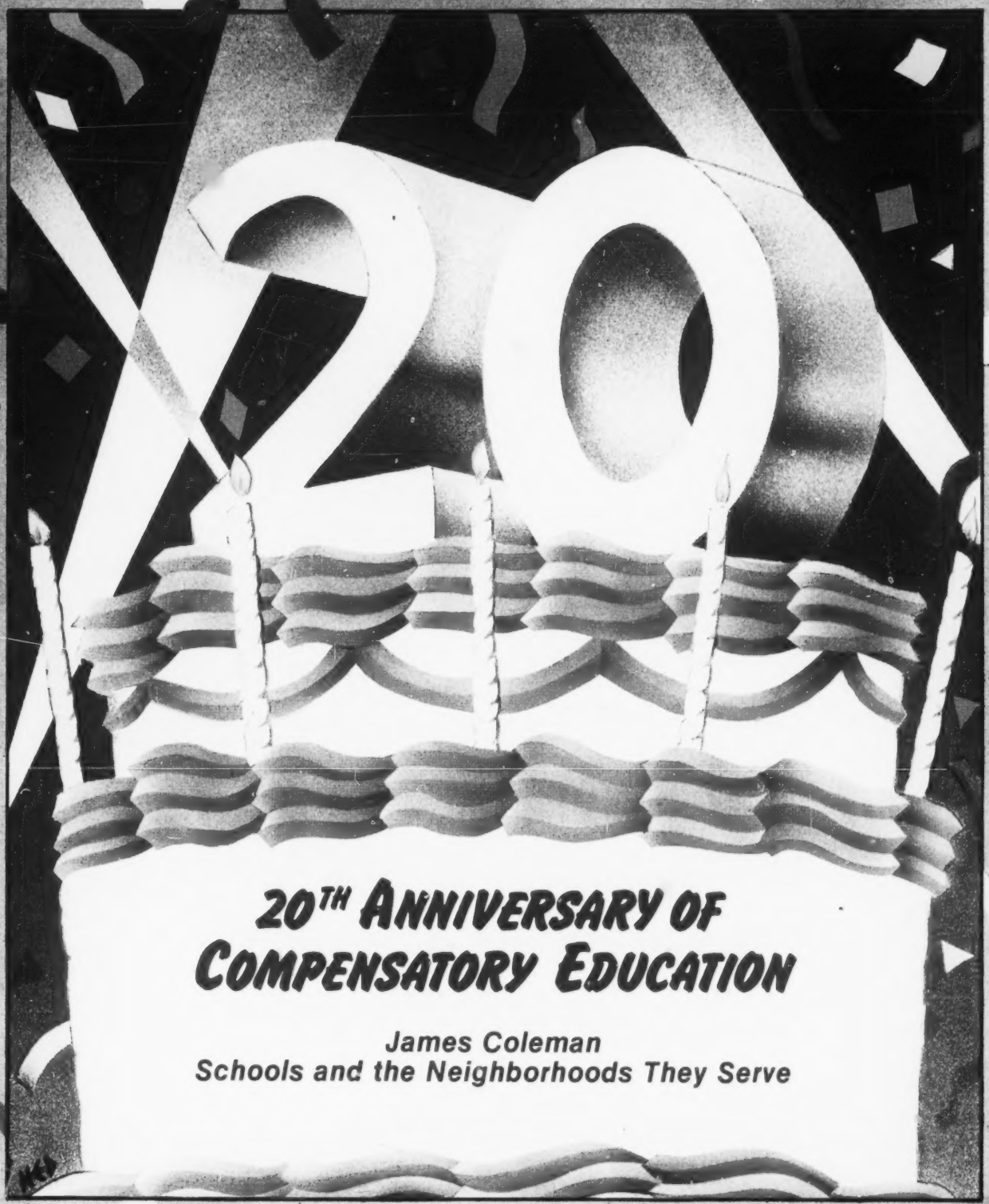
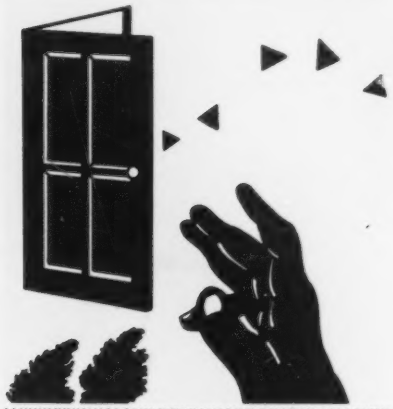


20TH ANNIVERSARY OF COMPENSATORY EDUCATION

James Coleman
Schools and the Neighborhoods They Serve



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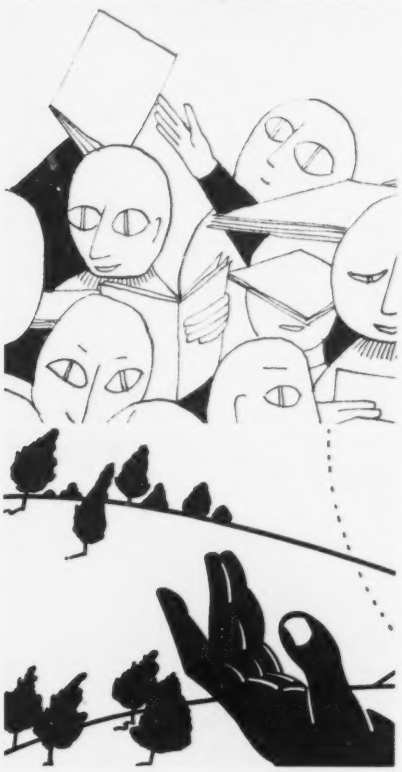

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Evidence That Good Early Childhood Programs Work

by Lawrence J. Schweinhart and David P. Weikart

Good preschool programs have both short- and long-term positive effects on low-income youngsters, say the authors. They provide evidence of this effectiveness from evaluations of seven exemplary programs.

IN THE EARLY 1960s, many leading educators and social scientists expressed hopes that preschool education programs for poor children could help break the cycle of poverty. They assumed that a chain of cause and effect linked family poverty to the scho-

LAWRENCE J. SCHWEINHART is director of the Voices for Children Project at the High/Scope Educational Research Foundation, and DAVID P. WEIKART is president of High/Scope. This article is based on Chapter 6 of Changed Lives: The Effects of the Perry Preschool Program on Youths Through Age 19 *(Ypsilanti, Mich.: High/Scope Press, 1984).*
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Illustration by Andrea Eberbach

lastic failure of children and to their subsequent poverty as adults.

These educators and social scientists speculated that preschool education would enhance the intelligence of poor children. This theory received support from early reports that several experimental preschool programs were in fact raising I.Q.s.[1]

However, two well-publicized events in 1969 undermined the popular credibility of the scientific basis for claims about the beneficial effects of preschool education for poor children. The first was a negative evaluation, by the Westinghouse Learning Corporation and Ohio University, of the first years of Head Start; the second was Arthur Jensen's article in the *Harvard Educational Review*, in which he argued that "compensatory education has been tried and it apparently has failed."[2]

As the years passed, however, evidence of the effectiveness of preschool began to mount. Evidence from several evaluations demonstrated that good preschool programs have both short- and long-term positive effects on low-income youngsters. Many studies bear on these issues, but we will consider only seven of these evaluations here. The ones we chose, though not perfect, are among the most scientifically rigorous, and reviewing them provides a clear picture of the long-term effectiveness of early childhood education, as well as an overview of some of the problems that researchers face in conducting such studies.

SEVEN STUDIES

The seven studies listed in Table 1 have followed subjects at least to age 9 and at most to age 21. They have been conducted in locales that represent a cross section of America's urban communities, in both northern and southern states, though all were conducted in areas east of the Mississippi River. Six of the seven studies evaluated programs that operated in a single location.

These seven studies and most of the other recent research on the effects of early childhood education have focused on children living in poverty. The concern of the 1960s for righting the wrongs of poverty was closely tied to the struggle of blacks to obtain civil rights. Thus the response to this concern tended to focus on the needs of the black population, combining compensatory education programs with new policies to insure equal rights in voting, housing, employment, and education. It is not surprising, then, that in most of the studies reviewed here, at least 90% of the subjects are black.[3]

The size of the samples and any special characteristics of the populations are listed in Table 2. The sample sizes varied from a low of 40 in the Milwaukee Study to 2,058 in the New York Prekindergarten Program. The Perry Preschool Project focused on children whose tested I.Q.s at age 3 were between 60 and 90.* The Milwaukee Study focused on children whose mothers had tested I.Q.s of 75 or below. The Harlem Study focused exclusively on males. The New York Prekindergarten Program was open to the public in selected school districts, so the sample more nearly represents the racial mix of low-income families in the population at large.

Attrition is a major threat to the validity of longitudinal studies. As more subjects are lost, both internal and external validity are at risk. The investigators who carried out these seven studies fared well in locating subjects for their follow-up studies: they found at least 71% of the original subjects. The Perry Preschool Project found 100% of its original subjects and interviewed 98% of them. The median percentage of subjects located in the follow-ups was 80%. Moreover, differential attrition across groups within the subject populations was not large enough to constitute a major problem.

Four of the seven studies used the standard experimental design; their treatment and control groups were selected from the same population by procedures designed to insure equivalent groups. In the study of the Early Training Project and in the Milwaukee Study, students were randomly assigned to groups. In the Harlem Study, treatment groups were selected by applying the same sample selection pro-

*The data for the Perry Preschool Project are included in the tables, but we will limit our discussion here. For a more detailed description of the evaluation of the Perry Preschool Project, see "The Promise of Early Childhood Education," by Lawrence J. Schweinhart, John R. Berrueta-Clement, W. Steven Barnett, Ann S. Epstein, and David P. Weikart, p. 548, this *Kappan*.

Table 1. The Seven Studies

Study	Year Study Began	Place	Age of Subjects At Last Report
Early Training Project	1962	Murfreesboro, Tenn.	21
Perry Preschool Project	1962	Ypsilanti, Mich.	19
Mother-Child Home Program	1965	Long Island, N.Y.	9-13
Harlem Study	19[illegible]	New York, N.Y.	13
Rome Head Start Program	1966	Rome, Ga.	20
Milwaukee Study	1968	Milwaukee, Wis.	10
New York Pre-K Program	1975	New York State	9

Table 2. Design Information

Study	Selection Procedure	Special Sample Characteristics*	Original Sample Size	Subjects Included in Most Recent Follow-up %
Experimental Design				
Early Training Project	Random assignment	——	90	80
Harlem Study	Selections from same population	Boys only	315	81
Milwaukee Study	Random assignment	Mothers' I.Q.s 75 and below	40	80
Perry Preschool Project	Assignment of matched pairs	Children's I.Q.s 60-90	123	98
Quasi-experimental Design				
Mother-Child Home Program	Assignment by site	——	250	74
New York Pre-K Program	Some assignment by site	42% white; 42% black; 16% other	2,058	75
Rome Head Start Program	Self-selection	Blacks and whites	218	71

*All samples were selected on the basis of family poverty. Unless otherwise noted, 90% or more of the subjects are black.

cedures to children born in different months. By chance, one of the two experimental groups had an average I.Q. at age 3 that was six points higher than the average I.Q. of the control group at age 2 years and eight months. This difference was controlled for in the analysis of group differences.

Three of the seven studies used a quasi-experimental design; their treatment and control groups were selected from different populations. One such study, that of the Rome Head Start Program, began in 1966 by identifying all first-graders in the Rome, Georgia, public schools who qualified for federal funds for the economically disadvantaged. Some of these students had attended Head Start and some had not. In the absence of data to the contrary, we cannot rule out the possibility that Head Start participants and nonparticipants in this study differed in important ways before the study began. Because of such doubts, this study cannot stand alone. However, in combination with other studies, it bears examination because of its extraordinary duration.

In the study of the Mother-Child Home Program – a quasi-experimental effort for the years reviewed here – treatment was offered to all willing participants within a given geographic area. This group was then compared to a demographically similar control group in a nearby geographic area. The groups thus selected were generally equivalent on important background factors, though some risk of unmeasured group differences may affect the outcomes of the study.

The third quasi-experimental study, that of the New York Prekindergarten Program, compared two control groups to an experimental group of approximately 1,800 youngsters who took part in the program in 1966. The control group for comparisons of test scores consisted of 87 children on the program's waiting list. This group may or may not have differed from the program participants, depending on the original procedures for selecting participants. For comparisons of scholastic placement, the control group consisted of both the waiting-list group and a group of 171 children of slightly higher socioeconomic status who came from neighboring school districts. Thus some between-group differences certainly exist, but they tend to favor the control group. For example, mothers in the treatment group reported 10.9 years of schooling, while control-group mothers from other districts reported 12.0 years of schooling.

The seven programs varied in size, design, and presumably cost. The Milwaukee program was the most extensive, providing full-time, year-round developmental child care for children ranging in age from a few months to 6 years. It also provided an educational and vocational program for mothers. The Perry Preschool Project provided one home visit per week and a morning classroom program five days a week for two school years (at ages 3 and 4). Its classroom component was equivalent in scope to the one-year programs of the New York Prekindergarten Program for 4-year-olds and the Rome Head Start Program for 5-year-olds. The latter two programs also included several home visits during the school year and offered parents the chance to become involved in the classrooms. The Early Training Project featured part-time classroom experiences five days a week in the summer and weekly home visits during the school year for either three years (for children starting at age 3) or two years (for children starting at age 4). The Mother-Child Home Program consisted of twice-weekly home visits for one to two years, and the Harlem Study provided one-to-one sessions between a child and a tutor twice weekly for eight months.

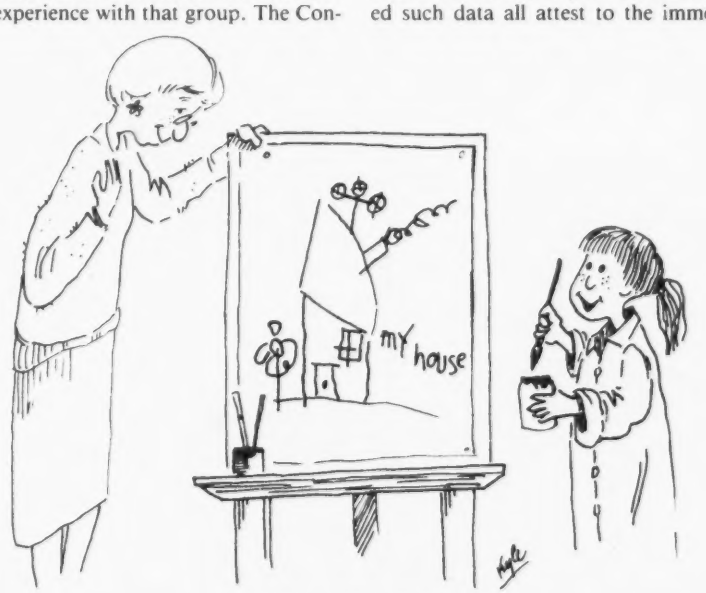
In reviewing the findings of these studies, we will also mention corroborating findings from the Consortium for Longitudinal Studies. The Consortium was an association of a dozen educators and psychologists, each of whom had initiated a longitudinal study of an early childhood program during the 1960s and had agreed to collaborate in a follow-up assessment during the late 1970s. The Consortium was formed in 1975 by Irving Lazar of Cornell University and Edith Grotberg of the U.S. Administration for Children, Youth, and Families. As investigators for the Perry Preschool Project, we belonged to the Consortium, and our review of the seven studies in this article is the better for our experience with that group. The Consortium based its conclusions on careful review of the methodology of each longitudinal study, and we maintain that tradition here.[4]

The best-documented preschool effect is an immediate improvement in intellectual performance as represented by intelligence test scores.

FINDINGS

The documented effects of early childhood education may be organized according to the major outcomes for participants at each period of their lives. These outcomes and the ages at which they occurred are: improved intellectual performance during early childhood; better scholastic placement and improved scholastic achievement during the elementary school years; and, during adolescence, a lower rate of delinquency and higher rates of both graduation from high school and employment at age 19.

Early childhood. The best-documented preschool effect is an immediate improvement in intellectual performance as represented by intelligence test scores. Of the studies reviewed here, the six that collected such data all attest to the immediate



"My daddy built it."

In these studies, every comparison of scholastic placement was favorable to the group that had received early childhood education.

positive effect of early childhood education on I.Q. Four studies reported a maximum effect of between one-half and one standard deviation (16 points on the Stanford-Binet test); however, statistically significant group differences disappeared by age 8. The intensive Milwaukee Study had a maximum effect of two standard deviations; the difference when the children were last tested (at age 10) was still greater than one standard deviation.

Two other studies in the Consortium for Longitudinal Studies reported effects on I.Q. of about half a standard deviation, which disappeared by age 8. Craig Ramey and his colleagues recently reviewed 11 experimental studies that included I.Q. data on children between the ages of 1 and 6; eight of these studies had data on children between the ages of 1 and 3. In every study, the average I.Q. of children who participated in preschool was as good as or better than the average I.Q. of children in control groups. I.Q. differences ranged from zero in two studies to 21 points in one; the median difference was six points. Of the eight studies with I.Q. data for children between the ages of 1 and 3, six showed I.Q. differences of up to half a standard deviation, and two showed I.Q. differences between one-half and one standard deviation.[5]

Elementary school years. In the studies we are reviewing, every single comparison of scholastic placement was favorable to the group that had received early childhood education (Table 3). In four of the five studies that included data on special education placements, the rate of such placements was usually reduced by half. In the Perry Preschool Project, the overall figure for special education placements (by student-years rather than by students, as reported here) was reduced by half. Two studies report statistically significant reductions in retentions as well. The Harlem Study could not obtain data on placements in special education.

The staff of the Consortium for Longitudinal Studies reported similar findings on scholastic placement. Moreover, their technique of pooling probability estimates confirms the improbability of obtaining all the findings in Table 3 purely by chance.

Avoiding placement in special education programs was one of the major financial benefits of preschool education to emerge from the cost-benefit analysis of the Perry Preschool Project. The strength and consistency of the finding that participants avoided such placements in these other studies argue persuasively that these other preschool programs, too, would show a favorable cost-benefit ratio.

Most of the experimentally derived evidence for the positive impact of preschool on scholastic achievement comes from the study of the Perry Preschool Project, which found differences consistently favoring the preschool group over the control group at ages 7, 8, 9, 10, 11, 14, and 19. Of the other studies reviewed here, only that of the Early Training Project had sufficient data on achievement (from 70% or more of the subjects) to enable conclusions to be drawn. This study found some positive effects at age 8, but no effects at ages 7, 10, or 11.

The Consortium for Longitudinal Studies analyzed achievement test scores across seven of its studies. The pooled analysis found statistically significant positive effects of preschool on arithmetic scores at ages 10, 11, and 12, but not at

The Promise of Early Childhood Education

by Lawrence J. Schweinhart, John R. Berrueta-Clement, W. Steven Barnett, Ann S. Epstein, and David P. Weikart

Early childhood education has a lasting effect on adult life, claim the authors, who examine the best-known longitudinal study of the effects of preschool programs, the Perry Preschool Project.

ONE OUT OF five children in the United States lives in poverty.[1] Only 39% of the 4-year-olds in families that are below the poverty line attend preschool programs.[2] Yet recent longitudinal studies of early childhood programs — such as the Perry Preschool Study that we are report-

LAWRENCE J. SCHWEINHART is director of the Voices for Children Project at the High/Scope Educational Research Foundation, Ypsilanti, Mich. JOHN R. BERRUETA-CLEMENT is a Congressional Science Fellow, sponsored by the Society for Research in Child

age 13. In reading, the Consortium analysis found statistically significant positive effects of preschool at age 10 only.

Adolescence. The studies of the Perry Preschool Project and of the Rome Head Start Program are the only preschool studies we know of that have collected information on delinquency or crime – either from police and court records or from self-reports. Neither study found a difference between participants and nonparticipants in the number of persons referred to juvenile court. But the study of the Perry Preschool program did find reduced delinquency among participants – documented by self-reports at age 15[6] and by official records of either total number of arrests or referrals to juvenile court.

Both the Perry Preschool Project and the Early Training Project collected information on rates of teenage pregnancy. The Perry Project reported 64 teenage pregnancies per 100 females who had attended preschool and 117 teenage pregnancies per 100 females who had not attended preschool. The Early Training Project found that 38% of the females in the study reported a pregnancy, with no between-group differences. The Early Training Project did find that, after pregnancy and childbirth, 88% of the females who had gone to preschool were likely to complete high school, while only 30% of

Table 3. Findings for Scholastic Placement

Study	Program Group %	Control Group %	p*
Rome Head Start (age 20)			
Placed in special education	11	25	.019
Retained in grade	51	63	--
Dropped out of high school	50	67	.042
Perry Preschool (age 19)			
Placed in special education	37	50	--
Retained in grade	35	40	--
Dropped out of high school	33	51	.034
Early Training (age 18)			
Placed in special education	3	29	.004
Retained in grade	53	69	--
Dropped out of high school	22	43	.079
Harlem (age 13)			
Placed in special education	No data	No data	No data
Retained in grade	24	45	.006
Dropped out of high school	No data	No data	No data
New York Pre-K (age 9)			
Placed in special education	2	5	.006
Retained in grade	16	21	.019
Dropped out of high school	No data	No data	No data
Mother-Child Home (age 9)			
Placed in special education	14	39	.005
Retained in grade	13	19	--
Dropped out of high school	No data	No data	No data
Milwaukee	No data	No data	No data

*Two-tailed *p*-values are presented if less than .1.

ing here – have shown that good preschool programs can have a beneficial effect on the lives of children reared in poverty.[3]

The federal government invests about a billion and a half dollars annually in early childhood programs for poor children through Head Start, federally funded child-care services, education programs for the disadvantaged, and incentive grants for handicapped children.[4] Several states invest in early childhood programs independently of the federal government, and even more states are considering doing so. New York and South Carolina have substantially increased their funding of early childhood programs, and Texas has begun a new program. Local agencies and school districts also provide early childhood programs, though no national statistics have been compiled. A recent survey by the Michigan Department of Education found that one-third of that state's school districts offer prekindergarten programs.[5]

The past two decades have seen an increasing number of reports of longitudinal evaluations of early childhood programs

Illustration by Andrea Eberbach

Development. W. STEVEN BARNETT was an economist at High/Scope and is now at Utah State University, Logan. ANN S. EPSTEIN is a senior research associate at High/Scope, and DAVID P. WEIKART is president of High/Scope. *©1985, High/Scope Foundation.*

Recent Reports on the Seven Studies

Early Training Project. Susan W. Gray, Barbara K. Ramsey, and Rupert A. Klaus, *From 3 to 20 — The Early Training Project* (Baltimore: University Park Press, 1982).

Perry Preschool Project. John R. Berrueta-Clement, Lawrence J. Schweinhart, W. Steven Barnett, Ann S. Epstein, and David P. Weikart, *Changed Lives: The Effects of the Perry Preschool Program on Youths Through Age 19* (Ypsilanti, Mich.: High/Scope Press, 1984).

Mother-Child Home Program. Phyllis Levenstein, John O'Hara, and John Madden, "The Mother-Child Home Program of the Verbal Interaction Project," in Consortium for Longitudinal Studies, *As the Twig Is Bent . . . Lasting Effects of Preschool Programs* (Hillsdale, N.J.: Erlbaum, 1983), pp. 237-64.

Harlem Study. Francis H. Palmer, "The Harlem Study: Effects by Type of Training, Age of Training, and Social Class," in *As the Twig Is Bent. . . ,* pp. 201-36.

Rome Head Start Program. Eleanor Monroe and M. S. McDonald, "A Follow-up Study of the 1966 Head Start Program," Rome City Schools, Rome, Ga., 1981.

Milwaukee Study. Howard L. Garber and Rick Heber, "The Efficacy of Early Intervention with Family Rehabilitation," in Michael J. Begab, H. Carl Haywood, and Howard L. Garber, eds., *Psychosocial Influences in Retarded Performance, Vol. II: Strategies for Improving Competence* (Baltimore: University Park Press, 1981), pp. 71-88.

New York Prekindergarten Program. David J. Irvine, "Evaluation of the New York State Experimental Prekindergarten Program," paper presented at the annual meeting of the American Educational Research Association, New York, N.Y., 1982.

the females who had not gone to preschool were likely to return to school after pregnancy and childbirth.

In three of the studies reviewed here, youngsters who had attended a preschool program were less likely to drop out of high school than were their peers who had not attended preschool. Table 3 shows that the dropout rates of those who attended preschool as opposed to those who did not were 17% lower in the Rome Head Start Program, 21% lower in the Early Training Project, and 18% lower in the Perry Preschool Project. As far as we know, the Perry Project is the only study of the effects of preschool that includes data on employment after graduation, reporting an employment rate at age 19 of 50% for the preschool group and 32% for the non-preschool group.

FROM OUR REVIEW of these seven studies and from the data collected by the Consortium for Longitudinal Studies, we feel safe in concluding that *good* early childhood programs are a wise investment of public funds that can benefit children, their families, and all citizens and taxpayers. To what extent is the U.S. making this investment today?

During the past 30 years, the federal government has provided the lion's share of funding for early childhood programs for children from low-income families. For prekindergartners, this funding has taken two forms: the Head Start Program and subsidized child care. Head Start has maintained a modest but steady growth since it began in 1965. Federal funding for child care — now provided primarily through the Social Services Block Grant and the Child Care Food Program — has had its ups and downs, but it is still substantial. The federal government annually provides about a billion dollars each for Head Start and subsidized child care.

Compensatory education, during the past three decades, has essentially been delivered by Title I of the Elementary and

for poor children. Such research was originally based on the hypothesis that human intelligence could be improved during the early years. However, as the years have passed, the research has broadened its conceptual framework and considered program effects other than test scores and success in school.

In addition, theorizing about human development has moved beyond questions of whether such personal traits as intelligence are inherited or are products of experience. The focus today is on the unfolding relationship between an individual's genetic make-up and environmental opportunities. Still, all that we can observe and measure is a person's performance in a given setting. Thus the effects of the Perry Preschool Program reported here may be seen as a sequence of performances in various settings, at various times, and in various domains of life.

THE PERRY PRESCHOOL STUDY

The Perry Preschool Study examined the lives of 123 youths born between 1958 and 1962. The students were divided into five waves: Wave Zero, 4-year-olds selected in 1962; Wave One, 3-year-olds selected in 1962; Wave Two, 3-year-olds selected in 1963; Wave Three, 3-year-olds selected in 1964; and Wave Four, 3-year-olds selected in 1965.

Each wave was divided into a preschool group and a nonpreschool group. The Wave Zero preschool group attended preschool for one year; the other four preschool groups attended preschool for two years. For purposes of analysis, we generally combine the waves to form a larger sample. Our most recent longitudinal analysis was conducted using data collected when the subjects were 19 years old, an age reached by Wave Zero in 1977 and by Wave Four in 1981.

The children selected for the study lived in the attendance area of the Perry Elementary School, a neighborhood located on the south side of Ypsilanti, Michigan, that has been populated primarily by low-income black families for some time. Children of preschool age were identified by means of a school census of families with youngsters already attending the school, by referrals from neighborhood groups, and by door-to-door canvassing.

Once the preschool-age children had been identified, the socioeconomic levels of their families were assessed on the basis of the parents' education, the level of employment of the head of the household, and the ratio of rooms in the home to persons in the household. Children from families below a specified socioeconomic level were given the Stanford-Binet Intelligence Test. Those whose scores were between 60 and 90 and who exhibited no evidence of an organic handicap were selected for the study.

Families whose children participated in the study were considerably less well-off than the average American family, according to comparisons with data from the 1970 U.S. Census. The parents of participants had a median 9.4 years of schooling — only .4 years less than the national average for blacks in 1970, but 2.6 years less than the national average for the entire population. Fewer than one in five of the parents had completed high school. Forty-seven percent of the children in the study lived in single-parent families, although only 14% of all American families in 1970 were headed by a single adult.[6]

The scientific strength of this study — its ability to identify preschool effects 20 years later — is primarily due to an experimental design that randomly assigned subjects to treatment and control groups. Neither teachers nor parents had any say in who was assigned to the program and who was not.

Each year, children in the incoming wave were put in pairs according to their

Secondary Education Act of 1965, now Chapter 1 of President Reagan's Education Consolidation and Improvement Act of 1981. In deciding who participates in Chapter 1 programs, school districts must give priority to children enrolled in kindergarten through grade 12. Thus only a small portion of Chapter 1 funding has found its way to programs serving very young children. During the 1981-82 school year, Chapter 1 funds served a total of 4,866,108 students; only 332,355 of them (7%) were in kindergarten or prekindergarten programs.

However, there are good reasons for state and local school administrators to use whatever Chapter 1 funds they can for prekindergarten programs for children at risk of scholastic failure. The cost-benefit analysis of the Perry Preschool Project showed that school systems recoup their investment in a one-year prekindergarten program by the time the participants graduate from high school.

But the federal government is only a minor source of education funding in general. Well over 90% of funding for education comes from state and local sources. Furthermore, state and local governments bear the largest burden of paying for juvenile delinquency, teenage pregnancy, and welfare assistance. Therefore, state and local governments stand to profit the most from investment in good early childhood programs for children from low-income families.

California leads the nation in funding for early childhood education and child care, spending $277 million in 1984-85. No other state even comes close. New York spends only $155 million on early childhood programs, with $141 million of that sum coming from the Federal Social Services Block Grant. However, the New York Prekindergarten Program has received a good evaluation, and both the staunch support of that program by Gov. Mario Cuomo and State Education Commissioner Gordon Ambach and the recent increase in funding for that program (from $10 million to $14 million) are largely due to the positive research results. In South Carolina, Gov. Richard Riley made expanded child development programs an integral part of his education reform package, with funding for early childhood programs slated to rise to about $11 million. Texas has authorized $50 million for early childhood programs in the coming years, and Missouri recently passed comprehensive legislation on early childhood education. Funding legislation for early childhood programs is now pending in more than a dozen states.

Yet, despite compelling research findings and despite the recent actions of a number of states, there are still not enough good early childhood programs for children from low-income families. We must all do something about that.

1. Rupert A. Klaus and Susan W. Gray, *The Early Training Project for Disadvantaged Children: A Report After Five Years* (Chicago: University of Chicago Press, Society for Research in Child Development, Monograph No. 120, 1968); and David P. Weikart, ed., *Preschool Intervention: Preliminary Results of the Perry Preschool Project* (Ann Arbor, Mich.: Campus Publishers, 1967).

2. Westinghouse Learning Corporation, *The Impact of Head Start: An Evaluation of the Effect of Head Start on Children's Cognitive and Affective Development, Vols. I-II* (Athens: Ohio University, 1969); and Arthur R. Jensen, "How Much Can We Boost I.Q. and Scholastic Achievement?," *Harvard Educational Review*, February 1969, pp. 1-123.

3. This focus on early childhood education for low-income blacks has left its mark. In 1980, for 3- and 4-year-olds in families with annual incomes under $15,000, the preschool enrollment figures were 37% for black children but only 25% for white children. See Gerald Kahn, *School Enrollment of 3- and 4-Year-Olds by Race/Ethnic Category* (Washington, D.C.: National Center for Education Statistics, 1982), p. 13.

4. Irving Lazar, Richard Darlington, Harry Murray, Jacqueline Royce, and Ann Snipper, *Lasting Effects of Early Education* (Chicago: Society for Research in Child Development, Monograph No. 194, 1982). The investigators of the Early Training Project, the Harlem Study, and the Mother-Child Home Program also belonged to the Consortium.

5. Craig T. Ramey, Donna M. Bryant, and Tanya M. Suarez, "Preschool Compensatory Education and the Modifiability of Intelligence: A Critical Review," in Douglas Detterman, ed., *Current Topics in Human Intelligence* (Norwood, N.J.: Ablex, 1984).

6. Lawrence J. Schweinhart and David P. Weikart, *Young Children Grow Up: The Effects of the Perry Preschool Program on Youths Through Age 15* (Ypsilanti, Mich.: High/Scope Press, 1980). □

Stanford-Binet test scores; the members of each pair were assigned to different groups. Then, pairs of similarly ranked children were exchanged between the two groups to equate within-group ratios of boys to girls and to adjust the average socioeconomic level of the two groups. Finally, a toss of a coin determined the group assigned to the preschool condition and the group assigned to the nonpreschool condition.

We made few exceptions in this assignment procedure. In Waves Two, Three, and Four, any siblings were assigned to the same group as their older siblings in order to maintain the independence of the groups. Between three and six children with single parents employed outside the home were transferred from the preschool group to the nonpreschool group because they were unable to participate in the classroom and/or home-visit components of the preschool program.

Using these procedures, 58 children were assigned to the preschool group and 65 to the nonpreschool group. Once children were assigned to the groups, none of the families withdrew from the program.

Group comparisons on background characteristics provide added assurance that the effects we found can be attributed to the preschool program. When they entered the project, our two subject groups showed no statistically significant differences ($p < .1$) on the following background characteristics: ratio of boys to girls, child's age and I.Q. at entry, family socioeconomic level, father's presence or absence, parents' scholastic achievement, family welfare status, father's level of employment, household density, family size, and birth order.[7] Because several children whose single parents worked outside the home had been reassigned from the preschool group to the nonpreschool group, there was a statistically significant difference between the groups on maternal employment — 9% maternal employment in the preschool group versus 31% in the nonpreschool group. Statistical analyses indicate that the maternal employment rate had no effect on the pattern of findings.[8]

THE PRESCHOOL PROGRAM

The program to which the 58 children in the preschool group were assigned was an organized educational program directed at the intellectual and social develop-

ment of young children. Each year, teams of four teachers, who had received extensive inservice training, staffed the program. The children took part in the program for two school years, at ages 3 and 4, except in the case of Wave Zero, which included only 4-year-olds, who took part in the program for only one year.

The school year lasted for 7½ months, from October to May. Classes were conducted for 2½ hours each morning, Monday through Friday; the teacher/child ratio was one adult for every five or six children. Teachers made home visits to each mother and child for 1½ hours weekly. *The Cognitively Oriented Curriculum*[9] describes the course of daily activities.

Except for participation in the preschool program, both groups received the same treatment. All 123 children in the study were interviewed and tested in exactly the same way regardless of which group they were in. Testers, interviewers, and subsequent teachers were not informed about the group membership of the children. Any knowledge they did acquire about preschool attendance may be considered a natural extension of the experimental treatment.

Table 1. Major Effects of the Perry Preschool Program at Age 19

Category	N	Preschool Group (%)	Nonpreschool Group (%)	p*
Schooling Success				
High school graduation (or equivalent)	121	67	49	.034
College or vocational training	121	38	21	.029
Functional competence (average or above-average score)	109	61	38	.025
Ever classified as mentally retarded	112	15	35	.014
Percentage of years in special education	112	16	28	.039
Social Responsibility				
Ever detained or arrested	121	31	51	.022
Teen pregnancies	49	64	117	.084
Socioeconomic Success				
Employed	121	50	32	.032
Receiving welfare assistance	121	18	32	.044

*Two-tailed probability of chance occurrence.

Table 2. Summary of Costs and Benefits*

	Benefit or Cost**	
	One Year Preschool	Two Years Preschool
Measured		
Preschool program	−$4,818	−$8,289
Child care	290	572
Education, K-12	5,113	4,964
Earnings, ages 16-19	642	623
Welfare at age 19	55	53
Crime through age 20	1,233	1,197
Predicted		
College	−704	−684
Earnings after age 19	23,813	23,121
Crime after age 20	1,871	1,816
Welfare after age 19	1,438	1,396
Net Benefit†	$28,933	$23,769
Benefit/Cost Ratio	7.01	3.56

*Entries are present values in constant 1981 dollars, discounted at 3% annually.
**Costs are indicated as negative amounts.
†Column sums differ from net benefits because of rounding.

ANALYZING THE DATA

The major sources of data in the Perry Preschool Study were an interview at age 19, reports from primary and secondary schools, police and court records, and records of social service agencies. The outcome variables of this study may be divided into three domains of measurement: scholastic success, socioeconomic success, and social responsibility.

Attrition in the study sample was minimal. The median rate of missing data across all measures was only 5%. The interview at age 19 was administered to all but two study participants, and school records were located for all but 11. These low rates of missing data generally mean that attrition does not affect either the representativeness of the sample or the validity of group comparisons.

The findings for the subjects at age 19 are displayed in Table 1. In the area of scholastic success, members of the preschool group stayed in school longer, scored better on tests of functional competence, were less often classified as mentally retarded, and spent fewer years in special education classes. In the area of social responsibility, members of the preschool group were arrested less often than members of the nonpreschool group, and the females had fewer pregnancies as teenagers. In the area of socioeconomic success, nearly twice as many members of the preschool group were employed, and only half as many were receiving welfare.

A cost-benefit analysis of the program and its effects indicated that the money that society invested in the preschool program was money well spent. The return on the initial investment was 3½ times the cost of two years of preschool and seven times the cost of one year (based on an analysis of outcomes for pupils in Wave Zero only). The major benefits to society were in the form of reduced costs of later education and increased earnings, both actual and predicted. Other benefits included decreased costs for welfare assistance and crime. The economic benefits obtained by the end of high school were sufficient to justify public investment in one year of preschool for children at risk of failure.

Table 2 summarizes the costs and benefits of the program; all entries are in constant dollars discounted at 3%. Discounting takes into account the fact that it is better to receive an amount of money today than a year from today (much like the interest that would accrue on a bank deposit held for a certain interval). The 3% rate was chosen because it is the long-term economic growth rate for the nation.

The major benefits to society were in the form of reduced costs of later education and increased earnings, both actual and predicted.

The per-pupil costs of the Perry Preschool Program were relatively high, but no higher than the costs for many early childhood special education programs. The figures reported are upper-bound estimates of the full costs to society; some of these expenses, such as the cost of the building, would not be borne by a sponsoring agency. Furthermore, the program was an innovation when it began, with the emphasis on quality and effectiveness rather than on efficiency.

Our analysis does suggest certain ways that the program could have been made more efficient – for example, by limiting the program to one year instead of two. Table 2 shows that both one and two years of preschool are good investments, but the benefits of one year are about the same as the benefits of two years. Since two years cost about twice as much, there is little economic justification for investing in the second year of preschool. On the other hand, note that only 13 of the children in this study attended preschool for only one year, while 45 attended for two years. Thus we can be considerably more confident about the findings for two years than we can about the findings for one year.

However, the findings of the Perry Preschool Study and similar studies should not be construed as an endorsement of *all* early childhood programs. There is no intrinsic value in a young child's leaving home for a few hours a day to join another adult and a group of children. Unless the content of a program is carefully defined, a preschool is just another place for a child to be.

Such thinking has led us to conclude that quality is essential in early childhood programs if they are to have long-term benefits. We have developed a definition of quality in preschool programs that is based on research and on our experience in running such programs. Quality in early childhood programs calls for parent involvement, programmatic leadership by supervisors and directors, competent and genuinely enthusiastic teachers, an articulated curriculum of proven effectiveness, a sound inservice training program, and the feedback provided by program evaluation. If a program has these features, we believe it is a good one that will produce lasting effects.

The Perry Preschool Program was a developmental program that helped children to plan, to carry out their plans, and to take responsibility for problem solving. It did not simply follow either of the two most common approaches to early childhood education. First, it was not simply unguided play for children, with the teacher merely keeping them from harming themselves or their classmates. Second, it was not a narrowly focused academic program, and there was no academic drill. The focus was not on letters, numbers, shapes, and colors. Unfortunately, these things often become the focus of early childhood education, when they should properly be viewed as no more than means to an end.

A good early childhood program, we believe, teaches children two things: how to be good learners and how to work with adults who are not members of their families. These are the real basic skills to be imparted by early childhood education. If children do not become learners, open to their experiences, and if they don't learn to work with adults other than family members, then they will never have more than limited access to reading, writing, and arithmetic.

Two conclusions can be drawn from our research. The first, we have detailed here: a good preschool program helps children overcome the effects of poverty to some extent. But preschool and poverty are merely the specific experiences explored here. The more general conclusion of our study is that early childhood education has a lasting impact on adult life. Easy rhetoric, now documented as fact. The quality of life of today's young children has profound consequences for tomorrow's adults. For better or worse, that is the promise of early childhood education.

1. U.S. Bureau of the Census, *Current Population Reports*, Series P60, No. 133, Tables 1, 2.

2. Martin Chorvinsky, *Preprimary Enrollment 1980* (Washington, D.C.: National Center for Education Statistics, 1982).

3. These findings are more fully described in our monograph, *Changed Lives: The Effects of the Perry Preschool Program on Youths Through Age 19* (Ypsilanti, Mich.: High/Scope Press, 1984). A four-year grant from the U.S. Department of Education provided funding for the most recent phase of the research. The Levi-Strauss Foundation and the Rosenberg Foundation of San Francisco provided matching grants for the economic analysis and for a dissemination project. The views expressed in this article are solely those of the authors and do not necessarily reflect the official positions of the funding agencies.

4. Report by the Congressional Research Service of the Library of Congress to the House Select Committee on Children, Youth, and Families, *Federal Programs Affecting Children* (Washington, D.C.: U.S. Government Printing Office, 1983).

5. *Superintendent's Early Childhood Study Group Report* (Lansing: Michigan Department of Education, September 1984).

6. Lawrence J. Schweinhart and David P. Weikart, *Young Children Grow Up: The Effects of the Perry Preschool Program on Youths Through Age 15* (Ypsilanti, Mich.: High/Scope Press, 1980), pp. 17-19.

7. Ibid., pp. 21-24.

8. *Changed Lives* . . ., pp. 181-86.

9. David P. Weikart, Linda Rogers, Carolyn Adcock, and Donna McClelland, *The Cognitively Oriented Curriculum: A Framework for Preschool Teachers* (Urbana: University of Illinois, 1971). The curriculum has continued to evolve since then; its current status is described in Mary Hohmann, Bernard Banet, and David P. Weikart, *Young Children in Action: A Manual for Preschool Educators* (Ypsilanti, Mich.: High/Scope Press, 1979).

10. David J. Irvine, "Evaluation of the New York State Experimental Prekindergarten Program," paper presented at the annual meeting of the American Educational Research Association, New York, N.Y., 1982. □

"This is from his early period."

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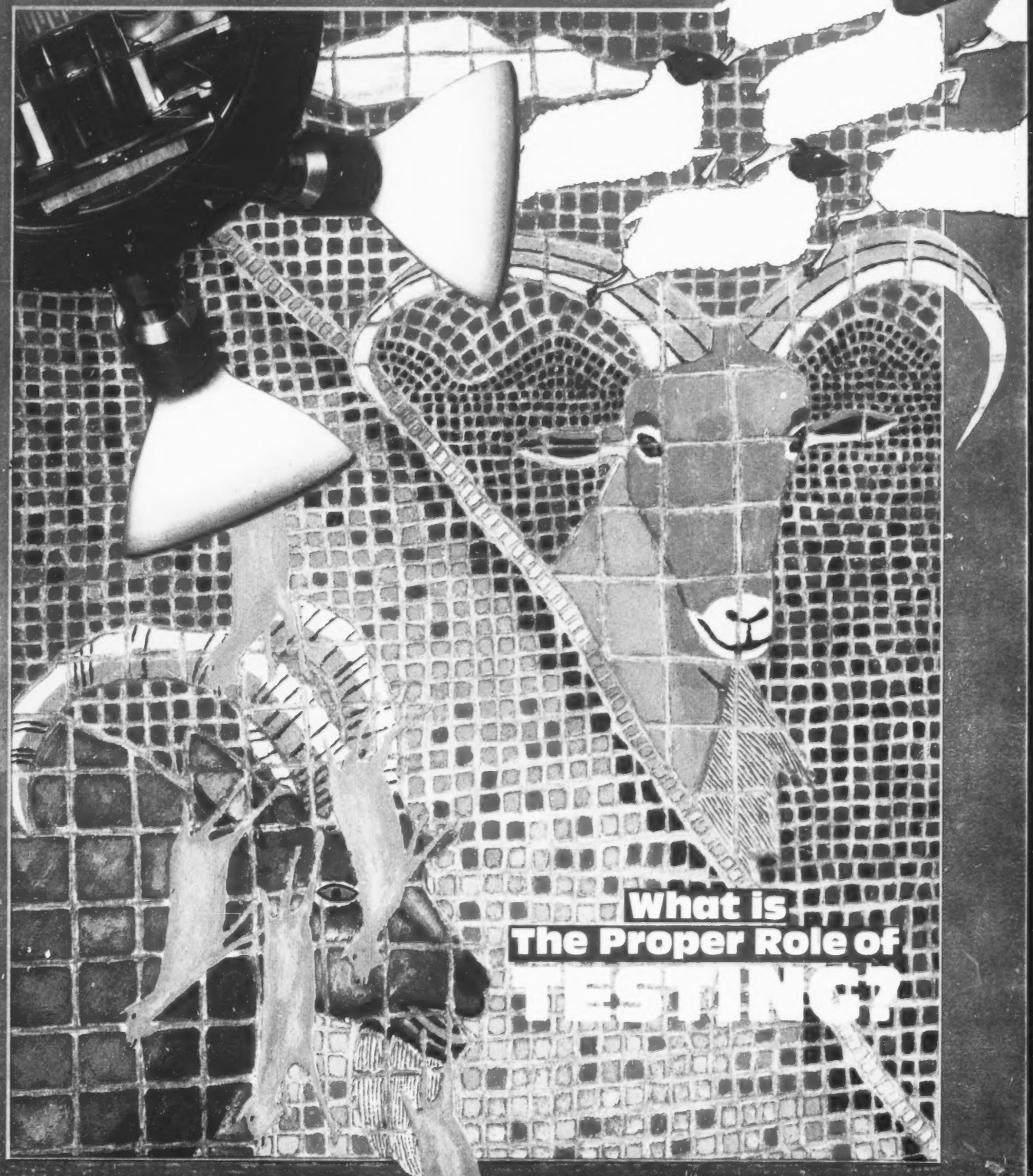
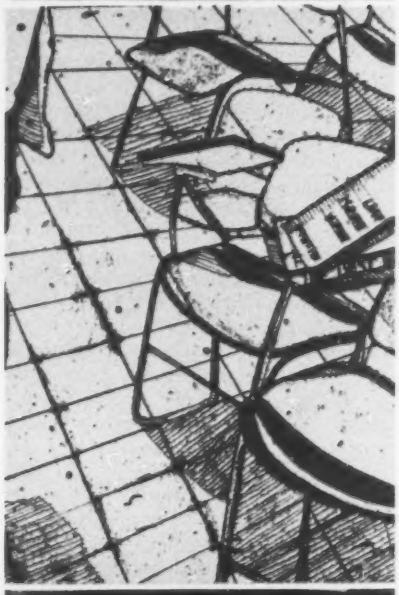


What is The Proper Role of TESTING?



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Cover Illustration: Joe LaMantia

In the political system, a common criterion that is applied equally to everyone is just, since it makes all individuals equal before the law. But in the educational system, a common criterion applied to all guarantees *injustice*, because various subgroups of the population have different talents that derive from their unique cultural backgrounds. These differing talents should be cultivated in ways that enable each group to contribute effectively.

The National Commission on the Higher Education of Minorities recommends "that educational institutions enlarge their concept of competency measures to include the assessment of growth in the noncognitive realm."[10] Speaking for the Commission, Alexander Astin notes that "time-honored uses of [standardized] testing are inconsistent with the ostensible purpose of higher education and detrimental to the progress of minorities."[11]

Frederick Hart goes a step further. He suggests that admissions officials pay less attention to scores on standardized aptitude tests that predict neither an individual's capacity to catch up and perform well during an entire college career nor that person's occupational success after graduation. Rather, admissions officials should attend more carefully to selecting students whose talents and points of view will enrich the learning environment and whose personal characteristics strongly suggest that they will serve the society after graduation.[12]

1. Christopher Jencks and David Riesman, in Stephen Wright et al., " 'The American Negro College,' Four Responses and a Reply," *Harvard Educational Review*, Summer 1967, pp. 451-68.
2. Caroline Hodges Persell, *Education and Inequality* (New York: Free Press, 1977), p. 61.
3. Howard F. Taylor, *The I.Q. Game* (New Brunswick, N.J.: Rutgers University Press, 1980), p. 131.
4. Susan S. Stodolsky and Gerald Lesser, "Learning Patterns in the Disadvantaged," *Harvard Educational Review*, Fall 1967, pp. 546-93.
5. Ibid.
6. Charles V. Willie and Arline McCord, *Black Students at White Colleges* (New York: Praeger, 1972), p. 86.
7. W. B. Schrader, "The Predictive Validity of College Board Admissions Tests," in William H. Angoff, ed., *The College Board Admissions Testing Program* (New York: College Entrance Examination Board, 1971), p. 119.
8. Charles E. Odegaard, *Minorities in Medicine* (New York: Josiah Macy, Jr., Foundation, 1977).
9. E. Virginia Calkins, "Impact of Innovative Selection Procedure on Medical Admissions: Implications for Black Students," paper presented at the annual meeting of the American Educational Research Association, Boston, 1980.
10. Alexander W. Astin, *Minorities in American Higher Education* (San Francisco: Jossey-Bass, 1982), pp. 188-89.
11. Ibid., p. 157.
12. Frederick Hart, "History and Organization of the Law School Admissions Test and the Law School Admissions Council," in *Hearings: Civil Rights Obligations*, Part 2A (Washington, D.C.: Committee on Education and Labor, U.S. Government Printing Office, 1974). □

Measurement-Driven Instruction: It's on the Road

by W. James Popham, Keith L. Cruse, Stuart C. Rankin, Paul D. Sandifer, and Paul L. Williams

A carefully conceived testing program can yield improvements in students' basic skills, claim the authors, who present four progress reports from around the nation.

WHEN FUTURE historians direct their attention toward U.S. education during the late 1970s and early 1980s, competency testing will certainly be one of their major interests. Among other things, they will surely want to know whether the overall effects of the widespread adoption of competency testing programs were harmful or helpful. Although there are a number of factors to consider when appraising the value of competency testing, its success or failure will be determined to a large extent by its impact on student learning.

The following pages constitute a report on competency testing programs that have positively influenced student learning. The evidence comes from one city, Detroit, and from three states – Maryland, Texas, and South Carolina – in which carefully crafted competency testing programs have produced meaningful gains in student learning. Moreover, the reports on the four programs were written by administrators intimately involved with them.

Although they differ in many ways, all four programs include one common feature: measurement was perceived as a *catalyst to improve instruction*. The common conclusion of these reports is that measurement-driven instruction works.

W. JAMES POPHAM (University of California/Los Angeles Chapter) is a professor in the Graduate School of Education at the University of California, Los Angeles. KEITH L. CRUSE (University of Texas Chapter) is director of assessment for the Texas Education Agency, Austin. STUART C. RANKIN (Wayne State University Chapter) is deputy superintendent, Division of Educational Services, Detroit Public Schools. PAUL D. SANDIFER (University of South Carolina Chapter) is director of the Office of Research of the South Carolina Department of Education, Columbia. PAUL L. WILLIAMS is chief of program assessment for the Maryland Department of Education, Baltimore.

SETTING THE STAGE

Before turning directly to the four competency testing programs, let us outline briefly the forces that triggered the preoccupation with competency assessment during the last decade. And it surely was a preoccupation. Rarely have the states adopted an educational strategy without federal, judicial, or financial prodding. Yet, starting in the mid-1970s, there emerged a string of local and state-mandated competency testing programs.

Some of these programs were unabashedly aimed at minimums. They sought to assess students' mastery of rather rudimentary skills in reading, writing, and arithmetic. Other competency testing pro-

grams, though still rooted in the basics, were focused on higher-level skills.

Many people mistakenly assume that most competency testing programs are tied to high school diplomas – that is, that youngsters are obliged to pass tests in order to receive high school diplomas. Although a few of the earliest competency testing programs were linked to the awarding of high school diplomas (Florida's testing program is surely the best known of these), most of the more than 40 statewide competency testing programs today rely on markedly less stringent sanctions for those who fail. Such sanctions include notifying a pupil's parents or providing remedial assistance to a student who performs poorly on the tests.

Yet, as diverse as these competency testing programs are, each was initiated for the same reason: public disenchantment with the quality of public schooling. The belief was widespread in the late 1970s that too many students were being promoted for "seat-time" rather than for their academic accomplishments. So legislatures installed competency testing programs to force educators to produce tangible evidence that students had actually mastered basic skills.

As soon as it became apparent that competency testing was upon us, a series of disputes arose – particularly among academics, who generally had little involvement in implementing the programs about which they were squabbling. Critics of competency testing programs claimed that, because most such assessment programs were aimed at minima, their effect would be curricular reductionism. These critics contended that teachers would gear their instruction only to the low-level competencies covered in the testing program. Proponents of competency testing retorted that, like it or not, the public had installed these evidence-producing tests and that, used properly, the tests could help determine whether an instructional program was achieving its goals.

It is still too early to tell whether most competency testing programs are having good or bad effects. Few reports exist that document the beneficial or deleterious outcomes of such programs. We hope that the four reports presented here will fill that void to some extent. We also recognize that there is a built-in bias in favor of positive reports about any kind of program. After all, who likes to crow about catastrophe? Still, we feel compelled to share the success of these programs, which have been in place long enough to allow us to discern whether or not they are yielding gains.

Central to each of these four programs is the tenet that a testing program, if deliberately designed to do so, can become a major force in improving an instructional program. If the assessment devices used are criterion-referenced tests that have been deliberately constructed to illuminate instructional decision making and if there are significant instructional consequences tied to pupils' test performances, then the testing program will drive the instructional program.

As diverse as these testing programs are, each was initiated for the same reason: public disenchantment with the quality of schooling.

The competencies that are covered by the test will become curricular magnets that draw instruction toward themselves. If the competencies are significant, rather than trivial, they will have a decidedly salutary effect on the instructional program. The notion of measurement-driven instruction is common to all four of the programs discussed in the remainder of this article.

Test Scores Rise In Texas

by Keith L. Cruse

The program. In 1979 the Texas legislature passed Senate Bill 350, which amended state law to provide compensatory instructional services to educationally disadvantaged children. As a part of that law, the Texas Education Agency was directed to adopt and administer criterion-referenced instruments designed to assess basic skills in mathematics, reading, and writing. The law required that all students in grades 3, 5, and 9 be tested.

Other characteristics of the testing program mandated by this law included the following.

- Ninth-grade students were to be given "secondary exit-level" tests designed to "assess minimum mathematics and English language arts competencies."
- The tests were to be kept secure.
- Overall student performance results were to be aggregated by both campus and district and made available to the public.
- Each school district was to use the results of the assessment program to design and implement appropriate compensatory services.
- Each school district was to receive an allotment for each educationally disadvantaged student enrolled in the district.

In 1983 the Texas legislature passed House Bill 723, which expanded the program by requiring students who fail the ninth-grade exit-level test to retake it each year until they demonstrate competency. The law also states that the board of trustees of a school district may require mastery of minimum exit-level competencies as a condition of graduation from high school.

To implement the requirements of this state law, the Texas Education Agency developed the Texas Assessment of Basic Skills (TABS). Committees of Texas educators – including teachers, principals, curriculum specialists, staff members of education service centers, and university professors – were convened in Austin to work with the state agency in reviewing and refining essential objectives and measurement specifications for reading and mathematics. Another committee, composed of staff members of the state agency and school district specialists, was formed to identify essential objectives for writing and to develop appropriate measurement specifications.

Criterion-referenced tests for grades 5 and 9 were completed in the fall of 1979, and criterion-referenced tests for grade 3 were completed in 1980. The fifth assessment cycle was conducted in February 1984.

The TABS tests contain items that measure objectives in mathematics, in reading, and in the mechanics of writing (capitalization, punctuation, spelling, and construction). Each objective is measured by four multiple-choice test items. In addition, the writing test for each grade requires each student to produce a written composition. Each composition is scored by at least two trained raters, using a procedure called "focused holistic scoring."

School districts receive test results for individual students and summary reports for each campus. The percentage of students mastering each of the objectives covered by these tests is also reported. Since the program began in 1980, nearly 3.5 million TABS tests have been administered to Texas youngsters.

The results. The 1984 performance of both third- and fifth-grade students shows marked improvement in all three areas of the curriculum tested. Improvement in the performance of third-graders between 1981 and 1984 on the objectives measured by the multiple-choice items ranged from 3% to 24%; the average improvement was 10%. Similarly, the range of improvement in the performance of fifth-graders between 1980 and 1984 on 28 out of 29 objectives ranged from 3% to 36%, with an average increase of 13%. The average performance of ninth-graders in 1984 was

higher than in any year since TABS was initiated.

The mastery levels established by the state board of education for exit-level performance tests were attained by 82% of the students tested in mathematics, by 86% of the students tested in reading, and by 70% of the students tested in writing. Compare these figures with the 1980 outcomes, when 70% passed in mathematics, 70% passed in reading, and 59% passed in writing.

In addition, differences in the performance of ninth-grade students for the three major ethnic groups (black, white, and Hispanic) have narrowed since the first TABS testing cycle in 1980. Figure 1 shows the rates of increase for these three ethnic groups in mathematics and reading. Obviously, there is no simple explanation of how an educational system as large as that in Texas can show these dramatic improvements in achievement. However, Texas educators have identified several common activities as likely contributors to the improvement. Once the legislature, the state board, and the state agency made it clear that certain basic skills were considered important for all Texas students, Texas educators rallied around some common efforts.

Workshops were conducted at the state, regional, and local levels on instructional activities that could be used to teach basic objectives.

- There was increased communication among teachers, administrators, curriculum specialists, and university professors concerning instruction related to the TABS objectives.
- After Texas educators reviewed state-adopted textbooks, several textbook requirements were changed to insure that material covered in the TABS tests was treated appropriately.
- When school curriculum specialists examined their scope-and-sequence charts to determine when TABS skills were taught, they were often surprised to learn that the skills were sometimes overlooked for two or three grades.
- Workshops were conducted at the state, regional, and local levels on instructional activities that could be used to teach these basic objectives.
- Although there were no penalties for poor performance, public pressure was exerted when district and campus results were compared in the news media.

In summary, Texas educators were handed a list of student learnings and told that these learnings were important. At that point, many routine educational activities began to be focused on these targets. Given these clarified instructional targets, the Texas system of education demonstrated that schools can make a difference.

After achieving such large improvements in student achievement, Texas is currently planning for the 1986 Texas

Figure 1. Percentages of Texas Ninth-Graders Mastering the Exit-Level Mathematics and Reading Tests, for Three Ethnic Groups, 1980-1984

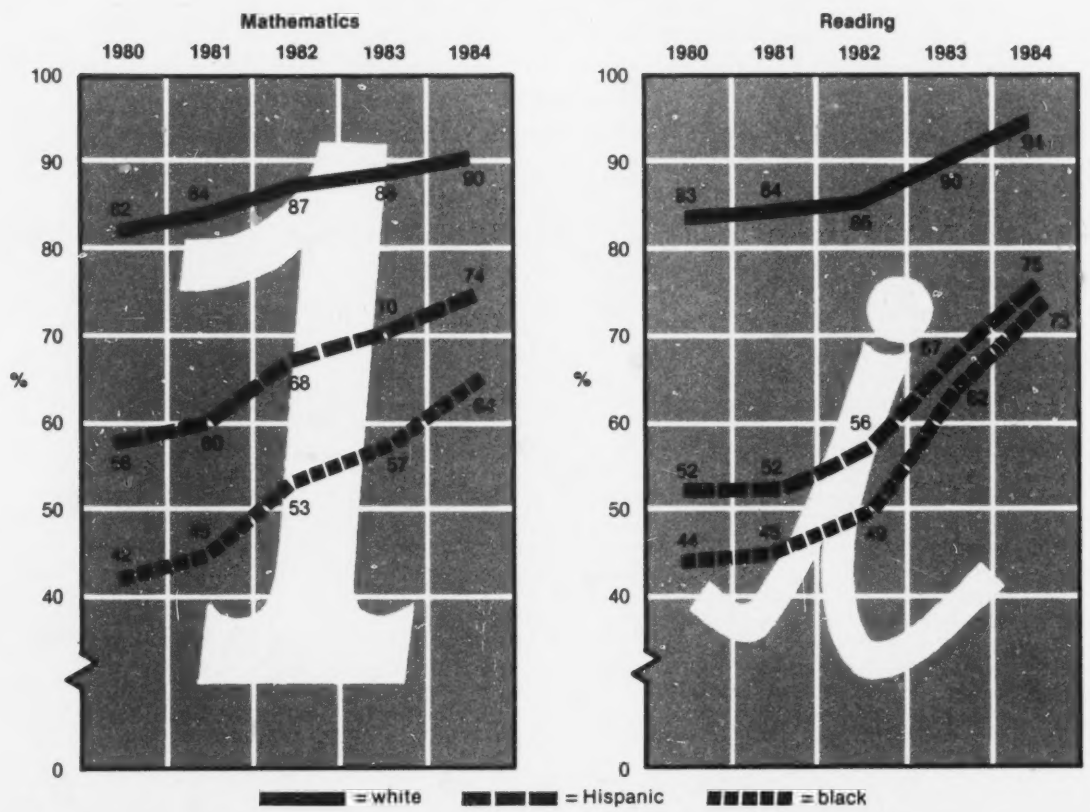

Chart by Mary Miller

Educational Assessment of Minimum Skills (TEAMS) program. In 1986 the standards for minimum competencies will be raised, more grades will be tested, and students will have to pass a 12th-grade test in order to receive a diploma. Texas schools will again have the opportunity to demonstrate their ability to improve student achievement.

Detroit Delivers
by Stuart C. Rankin

The program. In August 1977 the school board in Detroit unanimously approved a program establishing minimum competency requirements for high school graduates called the Detroit High School Proficiency Program (HSPP). After wide-ranging consultation with concerned members of the community, the board directed that fundamental skills in reading, writing, and mathematics be identified. Students in Detroit public schools would need to demonstrate mastery of these basic skills and complete other academic requirements in order to receive a board-endorsed diploma.

The board of education and Superintendent Arthur Jefferson, who proposed the minimum competency requirements, believed that the new program would benefit Detroit students for a number of reasons. Students would not graduate merely because of seat-time served. Instead, they would be given special opportunities to become proficient in at least a minimum number of the basic skills needed by adults in U.S. society.

The central message of the board's policy on minimum competency was clear. The board wanted its educational staff to 1) isolate basic competencies in reading, writing, and mathematics, 2) devise tests to measure to what degree a high school student possesses these competencies, and 3) provide on-target instruction to increase student proficiency in these competencies.

Many activities were necessary to insure that the board's goals would be accomplished. All of them focused on the need to provide the best possible competency-related instruction, so that as many students as possible could master the designated basic skills. To provide such on-target instruction, Detroit educators needed to modify the curriculum in a number of ways. Remedial instruction had to be devised for students who failed in their initial attempts to pass the competency tests. Perhaps more important, those instructional strategies found to be effective in promoting the minimum competencies in the basic skills were to be used in the teaching of other subjects. Thus the HSPP would serve to improve the overall quality of a Detroit high school education, as well as to insure that a Detroit high school diploma would have meaning.

Isolating the skills for which Detroit's high school graduates would be held accountable was undoubtedly the most significant task.

The HSPP began with the selection of the competencies in the basic skills. Next came the development of the proficiency examinations and related instructional materials. A pilot trial of the examinations and materials, followed by revisions, preceded the citywide implementation of the program.

Isolating the skills for which Detroit's high school graduates would be held accountable was undoubtedly the most significant task in developing the HSPP. The responsibility for the final selection of competencies rested with Superintendent Jefferson. He chose to be guided by the recommendations of a broadly representative group of Detroit citizens and educators. A competency selection committee of nearly 40 teachers, parents, administrators, students, businesspeople, and representatives of groups of concerned citizens was appointed in 1978. The committee deliberated for four months before choosing the competencies it wished to recommend to the superintendent.

During the early deliberations, members of the competency selection committee agreed that they would not choose excessively long, instructionally unmanageable lists of small-scope competencies for the three basic subjects. Instead, they would state the competencies in broader language so that a smaller set could be chosen. Those fewer, broader competencies would each encompass a number of lesser, enabling skills. For example, instead of endorsing a separate mathematics competency in multiplying, another in subtracting, and so on, all four of the basic arithmetical operations were combined into a single competency dealing with calculation. The committee reasoned that narrowing the program's focus to a small number of truly significant competencies would enable teachers to focus their attention on a meaningful set of targets.

After lengthy debate, the competency selection committee approved tentative competency lists in each of the three subject areas. The reading list included seven competencies; the writing and mathematics lists included six competencies apiece. These three lists were then submitted to the citizens of Detroit in a major outreach effort.

This phase of the selection process allowed a variety of individuals to offer advice about which of the competencies should be selected. Questionnaires asking for preferences were given to all teachers and administrators in the public schools. Representative samples of students and parents were given similar questionnaires. Public meetings were held by the various regional offices of the Detroit schools, and the *Detroit Free Press* published a complete list of the tentative competencies along with a reader-response form. Vari-

"I have chosen a few last words — probably grammatically incorrect."

Each Maryland school district conducted a comprehensive review of its curriculum to make certain that all competencies were covered.

ous civic and business groups held meetings at which their members discussed which competencies should be chosen. The competency selection committee reviewed the preferences of the various groups of citizens and chose four competencies each in reading, writing, and mathematics.

Developing the tests to measure the 12 competencies took nearly 10 months. Detailed test specifications containing all test development rules were prepared. For each competency, a pool of test items was created. Whenever possible, materials relevant to the Detroit area were incorporated into the test questions. All items were then reviewed and field-tested in the spring of 1979. A large, representative sample of Detroit students completed the items, and the final revision and selection of the items was guided by the performance of those students. Analyses of the field-test data also permitted the creation of test forms of equal difficulty.

While the HSPP examinations were being developed, a variety of supporting materials for teachers (practice exercises, a program manual, and audiotaped competency analyses) were readied for the formal introduction of the HSPP in September 1979.

The results. Two types of data on student test performance have been used to judge the effectiveness of the HSPP. The first of these is the High School Proficiency Examination (HSPE); the second is the state-administered Michigan Assessment of Educational Progress (MAEP).

The proportion of graduates passing all parts of the HSPE and receiving a board-endorsed diploma increased from 74% in 1981 to 79.1% in 1983. The proportion of 10th-graders passing all three parts of the HSPE increased from 33.9% in 1980-81 to 37.4% in 1982-83. The percentage of 12th-graders passing all three parts of the HSPE increased from 69.8% in 1980-81 to 74% in 1982-83. The pattern is clearly one of steady across-the-board improvement.

Perhaps even more important, Detroit students' scores on the MAEP have also improved. The proportion of 10th-graders attaining between 75% and 100% of the MAEP objectives in mathematics increased from 29.6% in 1980 to 38.7% in 1983. Similarly, the percentage of 10th-graders attaining between 75% and 100% of the MAEP objectives in reading increased from 51% in 1980 to 61.5% in 1983.

From these data, then, it appears that Superintendent Jefferson's original aspirations for improved achievement among Detroit's youngsters have been realized. Although the HSPP has been only one factor in bringing about these improvements, there is little doubt that the contributions of the competency testing program were significant. Measurement-driven instruction seems to be working in Detroit.

"Leo Durocher said it all: 'Nice guys finish last.' "

Success in South Carolina
by Paul D. Sandifer

The program. The South Carolina Basic Skills Assessment Program (BSAP) was established by legislation in 1978. Among the major provisions of the legislation establishing the BSAP are the requirements that the state board of education, through the state department of education, 1) establish statewide educational objectives in the basic skills with minimum standards of student achievement for readiness and for grades 1, 2, 3, 6, 8, and 11; 2) select a readiness test to be administered at the beginning of grade 1; and 3) select or develop criterion-referenced tests in reading and mathematics to be administered at the end of grades 1, 2, 3, 6, 8, and 11.

The law explicitly requires that the results of the testing program be used as a basis for providing appropriate instruction for those students who do not achieve the minimum standards. None of the tests are related to promotion and retention decisions or to the awarding of a high school diploma.

The objectives that BSAP tests are designed to measure were identified during the 1978-79 school year. Through a process involving more than 18,000 South Carolina educators, as well as members of the general public, 16 basic skills objectives were identified for grades 1 through 12. Each of the 16 objectives (six in reading, five in writing, and five in mathematics) is repeated at each grade level in essentially the same form but at a different level of complexity. All objectives at each grade level are accompanied by suggested measurement strategies that indicate the possible shifts in content and skills at each level.

Eighteen objectives were identified at the kindergarten level. The selection process was slightly different, but it still allowed for input from educators and the general public.

The BSAP tests were devised to assess the extent to which students have attained the educational objectives that were identified during 1978-79. In grades 1, 2, 3, 6, and 8, the reading and mathematics tests consist of six multiple-choice items for each of the objectives. In grade 11, the tests consist of 10 items for each objective. The readiness test used is an adaptation of the Boehm/Slater Cognitive Skills Assessment Battery (CSAB); it is individually administered and requires 25 to 30 minutes per child.

The writing tests in grades 6, 8, and 11 require students to write compositions in response to a specific writing prompt. There is no time limit. The administration procedures require that students develop and edit a draft of the composition on a sheet of scratch paper during the first 30 minutes of testing and then write a final draft. Teachers are required to provide dictionaries for students to use during the writing test.

The writing tests in grades 6, 8, and 11 and the reading and mathematics tests in grade 11 are mentioned here because they are part of the BSAP but will not be included in the discussion of the results. Changes in the writing tests made it impossible to compare results across the years 1981 through 1983, and the reading and math tests for grade 11 are omitted because data for the total population are available for only two years.

The results. Test results indicate that the BSAP is having a positive effect on instruction and student achievement. During the fall of 1979, 60.2% of students were judged "ready" for first grade. This percentage has increased each year since. In the most recent assessment, 72.4% of students were judged "ready." The increase of 12.2% between 1979 and 1984 represents an improvement in the readiness of more than 6,000 pupils.

The improvement in the readiness of minority students has exceeded that for the total population. In the fall of 1979, 44.7% of the black students were judged ready for first grade. By the fall of 1984 that percentage had risen to 60.9% – a gain of more than 16%. This increase in the performance of minority students is particularly encouraging since the largest gains are being made in the subpopulation that the CSAB pinpoints as having the greatest need for improvement.

The reading and mathematics test results for grades 1, 2, 3, 6, and 8 for the years 1981 through 1984 are also encouraging. Table 1 shows the percentage of students who met the BSAP standards in reading and in mathematics for each grade, for each year. In reading, the range of increases over the four-year period varies from a low of nine percentage points for grade 8 to a high of 13 percentage points for grade 2. In mathematics, the range of increases varies from a low of 10 percentage points for grade 6 to a high of 18 percentage points for grade 3.

The gains made by minority students in the areas of reading and mathematics generally parallel those reflected in the readiness data. The percentage of minority students who met the standard in reading increased at all grade levels. The increases for minority students, which exceed those for the total population, range from a low of 12 percentage points in grade 8 to a high of 18 percentage points in grade 2. In mathematics, the improvement of minority students also exceeded that of the total group. The increases in the percentage of minority students who met the mathematics standard range from a low of 11 percentage points in grade 6 to a high of 22 percentage points in grade 3.

These results support the assumption that was made in the initial stages of developing the BSAP: namely, that measurement-driven instruction can improve education. Such an instructionally oriented system of measurement requires that instructional targets be clearly defined, that expectations be communicated to instructional and supervisory personnel, and that the measurement system be carefully crafted to work with the instructional system. South Carolina educators are increasingly enthusiastic about an assessment program that is clearly succeeding.

Table 1. Percentage of Students Meeting the South Carolina Standards for Reading and Mathematics, 1981-83

	Grade				
	1	2	3	6	8
Reading					
1981	70	62	67	55	51
1982	72	69	69	62	52
1983	75	70	76	61	56
1984	80	75	77	65	60
Mathematics					
1981	68	69	61	47	43
1982	68	64	68	51	41
1983	76	76	74	56	42
1984	81	82	79	57	54

Maryland Moves Forward

by Paul L. Williams

The program. In late 1977 the Maryland State Board of Education, concerned about the acquisition of fundamental skills by public school students in the state, launched Project Basic. The Maryland Functional Testing Program is one component of Project Basic, Maryland's competency-based instructional program.

In districts in which there has been a great deal of staff development activity related to the testing program, scores have risen substantially.

Competencies were identified in seven areas: reading, mathematics, writing, citizenship, survival, the world of work, and the arts/physical education. These competencies were then reviewed by 13,000 Maryland citizens who represented business, labor, special education, legislators, students, college professors, teachers, and urban, suburban, and rural parents. From this review process, 232 validated competencies emerged that form the content base for the instructional component of Project Basic. The state board formally approved these competencies in early 1980 and published them in a document called the *Declared Competencies Index* (DCI).

After the competencies were approved, each local school district conducted a comprehensive review of its curriculum to make certain that all competencies were covered. The districts then certified to the state superintendent that all DCI competencies were firmly in place in the state's instructional system.

The state board and the state superintendent intended the DCI competencies to become graduation prerequisites. Thus they set about creating measurement instruments in the areas of reading, mathematics, writing, and citizenship. Competency in the other three areas – survival, the world of work, and the arts/physical education – was to be demonstrated by participation in certain programs.

Test development began by having instructional and measurement personnel determine the characteristics they wished to see reflected in a testing system. As a result of their deliberations, these specialists decided that any measurement program should be based on the following assumptions.

- The measurement component of the competency program must take place within a framework larger than "just a testing program."

• Measurement must directly help teachers and students.

• The DCI outcomes must be clearly articulated so as to provide clear instructional targets for teachers.

• Measurement instruments must reflect what is taught and how it is taught.

• Instructional personnel must be involved in all stages of test development.

• Measurement instruments must be fair; they must be free of bias and include appropriate modifications for special education students.

No existing test was adequate to fulfill all these prerequisites. A review of the literature led the test developers to believe that developing our own criterion-referenced instrument was the only way to insure that all the assumptions would be included.

The most important developmental activity was the production of the test specifications. Objectives within each content area to be tested were grouped into homogeneous content domains by teachers, supervisors, and the staff of the state department of education. These same people then generated specifications for each domain, and these specifications were the basis for item development and the production of instructional support materials.

The reading test has been used as a graduation prerequisite since the spring of 1982. Tests in mathematics and writing become graduation requirements with the class of 1987, and the citizenship test will become a requirement with the class of 1988. Now that the measurement component is in place, there is a great deal of interest in determining whether the measurement-driven instruction is having a positive effect on student learning.

"He certainly put it in terms I can understand. I got a D minus."

The results. The effects of a program such as Project Basic cannot be examined using true experimental methods. Once such a program is mandated, there is no way to hold any subset of students out of the program as a control group. However, this need not deter us from investigating other important indicators that, taken together, may give us a picture of the effectiveness of the program.

The indicators that are being monitored in Maryland include:

• the quantity and quality of training efforts,

• the quantity and quality of instructional support materials,

• organizational responses to instructional needs,

• informal self-report and record-keeping data,

• direct observation,

• test scores, and

• systematic studies.

The number of training activities conducted by the state or by local school districts is an indication of the attention given to preparing school personnel to see that students acquire the mandated skills. The areas of greatest need receive the most attention. For example, the passing rate for the reading test has steadily increased, until 93% of the ninth-grade students now pass on their first attempt. Passing rates in mathematics and writing are hovering around 55%. Thus the number of training activities in reading has decreased, while the number of training activities in mathematics and writing has increased.

A major effect of this training effort has been the production of large amounts of high-quality, on-target instructional materials for use in classrooms. The *Project Basic Instructional Guides* have been produced in two phases: a general instructional guide and more specific guides that contain streamlined test specifications, sample test items, and possible instructional activities.

Local districts throughout Maryland have taken a variety of approaches to developing instructional materials. Perhaps the most significant development has been the production of item banks at the district or building level. The items in these banks, constructed by teachers to be congruent with the test specifications, allow teachers to formulate diagnostic quizzes that can be used prior to the administration of the test. The effectiveness of remedial instruction can then be assessed by administering post-instruction quizzes that are also made up of items from the banks.

Various school districts throughout the state have reported many instructional and organizational alterations in response to Project Basic. Some of these reports include quantifiable data; some do not. But the reports of teachers and administrators still provide important information about the effectiveness of Project Basic, especially when the data in the reports are systematically collected and carefully analyzed.

Evidence of the pervasiveness of instructional applications of the test specifications has been gathered by direct observation of teachers and their classrooms. For example, many teachers have devoted a significant number of the visual displays in their classrooms to explaining the objectives found in the DCI. Phrases such as "main idea" and "problem solving" are often explained in these displays. The DCI is also cross-referenced with many basal and supplementary texts used in classrooms, and individual activity packets are available to teachers.

The actual results of the tests themselves are equally gratifying. The percentage of Maryland students who pass the reading test has risen consistently. When the test was first administered in the fall of 1980, 78% of the students passed. In 1981 the pass rate was 83%; in 1982, 89%; and in 1983, 94%. Much of this consistent improvement appears to stem from the increasing familiarity of Maryland educators with the test specifications for the skills being assessed.

When the mathematics test was first administered in 1982, only 40% of the students passed. One year later, the pass rate was 61%.

Specialists in both instruction and evaluation at the state department of education agree that there is a clear causal link between improvements in the performance of students on the tests and the amount of supporting activity that takes place in the local districts. In districts in which there has been a great deal of staff development activity related to the testing program, the scores of students have increased substantially; in similar districts in which little or no test-related activities have taken place, the students have exhibited far less improvement. The state department is currently carrying out a systematic study of this phenomenon.

FOUR SUCCESS stories are certainly not enough to declare a total victory for measurement-driven instruction. However, these four accounts do reveal that a carefully conceived measurement-driven strategy can yield improvements in students' basic skills. When future historians look back on the competency testing programs in Texas, Detroit, South Carolina, and Maryland, they will find solid evidence that measurement-driven instruction can work. □

plants. Not only do these buildings require massive restorations, but they also cost more to operate than modern buildings – and the costs continue to rise. Indeed, life in the inner city is never cheap. High rates of vandalism, high insurance premiums, and the economic uncertainties of their clienteles place further pressures on the already shaky fiscal resources of the private schools.

THERE IS little help in the offing. According to education researcher Thomas Vitullo-Martin, the Catholic church has invested nearly $1 billion in its inner-city schools during the past 10 years, largely in the form of "hidden subsidies." But those subsidies came from such sources as parish savings accounts and building funds, which were accumulated in more prosperous times and are now drying up.

Weighing this factor and the general situation of inner-city private schools today, as revealed by the League study, the outlook is not optimistic. Demand is increasing for the kind of education that such schools offer; nearly all the schools studied by the League had waiting lists. But the ability of these schools to continue to provide that education appears to be in jeopardy. Nor is there any serious debate about just what is at stake.

Virtually everyone agrees that high-quality education is the only realistic hope for inner-city children who want to escape the quagmire of joblessness, crime, drug use, and dependence on the government. Most observers also agree that inner-city public schools have failed to provide high-quality education. Not even the teacher unions can satisfactorily explain why two of every five black 17-year-olds have serious difficulties with reading, writing, and ciphering – or why, throughout the past decade, blacks scored an average of 100 points lower than the national norm on the Scholastic Aptitude Test.

Writing in the *New Republic*, Phil Keisling, an editor of *Washington Monthly*, listed the shortcomings of the public schools today, including the 300,000 "functional illiterates" who graduate from our high schools each year. Such "social problems" are more abstract and less pressing to teacher unions and elected officials than they are to the parents of children who face – here and now – the prospect of blighted lives. Thus, while inner-city parents struggle and sacrifice to send their children to private schools, the teacher unions rail about those "racist and elitist" institutions, the politicians in the state and federal governments completely ignore the educational needs of inner-city black and Hispanic children, and minority unemployment rates skyrocket. □

Christian Schools and Teacher Licensing

by Bruce K. Alcorn

In conducting a study of Christian schools, Mr. Alcorn found that such schools are interested in hiring qualified teachers and generally favor certification of some kind.

AS THE NUMBER of Christian schools has grown, so has the number of legal questions surrounding the control of private schooling in general.[1] State constitutions typically claim less control over private schools than they do over public schools, but the amount of this control varies greatly from state to state.

For example, Nebraska requires schools to be accredited by the state, a process that requires schools to use only state-certified teachers.[2] In some other states, private schools need only keep attendance records and meet minimal requirements for public safety, such as adhering to fire and health codes. Indeed, when state control over private education has been enforced, it has usually been through the mechanism of state attendance laws.[3]

One of the most controversial questions arising out of the debate over the public control of private schooling is whether or not the state should be able to require that private schools employ certified teachers. The attitudes of administrators in Christian schools and of their school boards vary considerably on this matter. Some feel that the principle of separation of church and state precludes any state control over Christian schools. This was the position of the pastor of the Faith Christian School in Louisville, Nebraska.[4] Other administrators voluntarily require their teachers to be certified, whether or not the state requires it.

This diversity of opinion led the Association of Christian Schools International (ACSI), the largest of several Christian school associations, to develop a teacher certification program of its own in 1979. That same diversity caused me to wonder about the specific practices of ACSI members with regard to certification. In September 1982 I mailed an eight-item questionnaire to all ACSI non-college members in the Midwest (as listed in the *1982 Directory of ACSI*). A total of 214 schools were included in this 10-state region, ranging from a high of 83 in Ohio to only one in North Dakota. Sixty-six percent of the schools responded. (See Table 1 for a state-by-state breakdown.)

The other items on the questionnaire asked about state laws governing teacher licensing, the school's attitudes toward these laws, and the school's position with regard to the ACSI certificate. The data elicited by these questions are not altogether clear. That is, responses from schools within the same state were not always in agreement about state laws. One reason for these discrepancies is that some states require that private schools employ

BRUCE K. ALCORN (Manchester College Chapter) is chairman of the Division of Education at Grace College, Winona Lake, Ind.

only certified teachers if they wish to be state-approved schools. If they do not desire state approval, however, they may employ whomever they choose. In an effort to resolve matters, I sent a brief questionnaire to the department of education in each of the states. The results are shown in Table 2.

Table 3 shows school certification requirements by state. Overall, 73% of the schools in this study require their teachers to hold valid state certificates, and fully 84% at least encourage their teachers to obtain state certificates. Indeed, in all states except Wisconsin a majority of the schools surveyed require their teachers to be certified – despite the fact that 49% of the respondents do not believe that their states require teachers in private schools to be certified.

Another curious finding of my survey is that only a meager 6% of the Christian schools that responded require their teachers to hold ACSI certification, even though the ACSI certificate is specifically designed for teachers in Christian schools. However, 55% at least encourage their teachers to obtain an ACSI certificate. (The ACSI certification program is still relatively new. Moreover, many teachers in Christian schools do not meet the requirements of the ACSI: those with degrees from Bible colleges are often deficient in liberal arts areas; those with liberal arts degrees often have weak backgrounds in theology and the Bible.)

Because Christian schools have experienced such rapid growth in recent years, no consensus has developed regarding certification, either by state agencies or by such groups as the ACSI. Nevertheless, the data in this study show that Christian schools are interested in employing qualified teachers and generally favor certification of some kind.

1. As I use the term, a Christian school is any nonpublic elementary or secondary school that calls itself a Christian school. In most cases, these institutions are religiously oriented day schools. Some are directly connected with a given church; others are legally independent.
2. "Christian School Defies Court Rule, Is Still Operating," *Education Week*, 3 March 1982, p. 6.
3. Patricia M. Lines, "State Regulation of Private Education," *Phi Delta Kappan*, October 1982, pp. 119-23.
4. "Private Schools' Conflict with Nebraska Officials Heats Up," *Education Week*, 29 September 1982, p. 5; and "Church and State," *Indianapolis Star*, 24 October 1982, p. 6-F. □

"Mr. Branson is a perpetual student."

Table 1. Distribution of ACSI Schools in the Midwestern States, 1982

State	Total		Church Related		Independent		Other	
	N	%*	N	%**	N	%**	N	%**
Illinois	10	7	6	60	4	40	0	0
Indiana	14	10	10	71	4	29	0	0
Iowa	5	4	4	80	1	20	0	0
Kentucky	5	4	4	80	1	20	0	0
Michigan	15	11	9	60	6	40	0	0
Minnesota	18	13	9	50	8	44	1	6
North Dakota	1	1	0	0	1	100	0	0
Ohio	62	44	44	71	15	24	3	5
South Dakota	4	3	2	50	2	50	0	0
Wisconsin	8	6	4	50	4	50	0	0
All States	142		92	65	46	32	4	3

*Figures add to more than 100% because of rounding.
**Within-state percentage.

Table 2. Survey of State Departments of Education

Questions	Ill.	Ind.	Ia.	Ky.	Mich.	Minn.	N.D.	O.	S.D.	Wis.
1. Can private schools legally operate without state approval?	Yes	Yes	Yes	*	No	**	No	Yes	No	Yes
2. Must *all* or almost all teachers be state certified?	No	No	Yes	*	Yes	No	Yes	Yes	Yes	No
3. Must only *some* teachers be state certified?	No	No	†	*	†	No	†	†	†	No

*Kentucky did not respond.
**The response from Minnesota said, "Not sure."
†Not applicable.

Table 3. Private School Requirements for Teacher Licensing (by State and Type of School)

	Required by School				Encouraged by School			
	Yes		No		Yes		No	
State	N	%	N	%	N	%	N	%
Ill.	6	60	4	40	9	90	1	10
Ind.	11	79	3	21	12	86	2	14
Ia.	5	100	0	0	5	100	0	0
Ky.	5	100	0	0	5	100	0	0
Mich.	13	87	2	13	13	87	2	13
Minn.	10	56	8	44	16	89	2	11
N.D.	1	100	0	0	1	100	0	0
O.	46	74	16	26	51	82	11	18
S.D.	3	75	1	25	3	75	1	25
Wis.	3	37	5	63	4	50	4	50
All States	103	73	39	27	119	84	23	16
Type of School								
Church related	63	68	29	32	75	82	17	18
Independent	36	78	10	22	40	87	6	13
Other	4	100	0	0	4	100	0	0